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Effects of Caffeine on the Muscular Endurance, Perceived Pain, and Effort of Resistance Trained Women

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Caffeine is a substance that is heavily used by Americans daily. It is commonly consumed by individuals prior to exercise, as research has shown that caffeine can enhance exercise performance. Research firmly supports the positive effects of caffeine on aerobic endurance performance. Research supporting the effects of caffeine upon resistance exercise is less consistent. It is believed that part of the positive effects of caffeine upon resistance exercise is due to a reduction of perceived effort and pain during the activity. The majority of research done on this topic has involved only male subjects. **PURPOSE:** The purpose of the present study was to examine the effects of acute caffeine ingestion on muscular endurance and perception of pain and effort in resistance trained (RT) women. **METHODS:** Eleven RT women volunteered in this double-blind, repeated measures study. One-repetition maximum (1 RM) was determined on the leg extension (LE) and chest press (CP) during the pre-assessment. During the two exercise sessions, participants ingested either 300 mg of caffeine or placebo and completed the same protocol twice. Participants completed three sets of repetitions (reps) to failure on the LE and the CP at 60% of their 1 RM. Rating of Perceived Exertion (RPE) and pain perception (PP) were taken after each set. **RESULTS:** A Two-way analysis of variance of repeated measures revealed caffeine had no effect on reps on the LE ($p=0.530$) and CP ($p=0.922$). No significant effect of caffeine on RPE was found on the LE ($p=0.499$). There was a significant result found in RPE on CP ($p=0.035$). No significance was found between caffeine and PP on LE (0.094) and CP ($p=0.518$). **CONCLUSION:** Caffeine has an effect on RPE during the chest press, but does not have an effect on muscular endurance, pain perception, or RPE during the leg extension on resistance trained women.